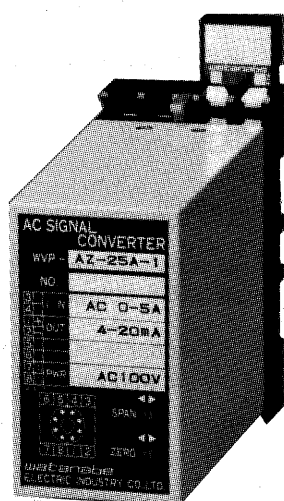# AC SIGNAL CONVERTER AND RMS TO-DC CONVERTER
## WVP-A□/E□



50 (W) x 96 or 116 (H) x 125.5 (D) mm    Approx. 400 g

These units allow AC voltage inputs or current inputs to be handled in a standardized manner within a system, and can convert them into DC signals suitable for long-distance transmission. Since Type EF and Type EZ adopt the true root-mean-square value operation system, they ensure particularly high reliability against distorted waves.

## Features

- A wide range of I/O signals capable of supporting diverse signal requirements
- Low-ripple output suitable for output to digital instruments
- Plug-in design to enable mounting on or demounting from DIN rails using a one-touch process
- Able to cope effectively with distorted waves (Types EF and EZ).

## Model   WVP -☐☐ -☐☐☐ - ☐

| | | |
|---|---|---|
| AC | Rectifier type | Non-isolated |
| EF | True r.m.s. value operation type | |
| AZ | Rectifier type | Isolated (Input ranges marked * are isolated by a transformer.) (Ranges other than those marked * are isolated by a photocoupler.) |
| EZ | True r.m.s. value operation type | |

| | Power Supply |
|---|---|
| 1 | AC 100 V ± 10%, 50/60 Hz |
| 2 | AC 200 V ± 10%, 50/60 Hz |
| 3 | DC 24 V ± 10% |
| 4 | AC 110 V ± 10%, 50/60 Hz |
| 5 | AC 220 V ± 10%, 50/60 Hz |

### Input Signal

| | Ranges marked * apply only to Types AZ and EZ. | Input Resistance |
|---|---|---|
| 13 | AC 0–1 V | Approx. 1 MΩ |
| 14 | AC 0–10 V | Approx. 1 MΩ |
| 35 | AC 0–35 V | Approx. 1 MΩ |
| 55 | * AC 0–100 V | Approx. 100 KΩ |
| 15 | AC 0–100 V | Approx. 1 MΩ |
| 56 | * AC 0–110 V | Approx. 110 KΩ |
| 16 | AC 0–110 V | Approx. 1 MΩ |
| 57 | * AC 0–150 V | Approx. 50 KΩ |
| 17 | AC 0–150 V | Approx. 1 MΩ |
| 58 | * AC 0–200 V | Approx. 200 KΩ |
| 18 | AC 0–200 V | Approx. 1 MΩ |
| 59 | * AC 0–250 V | Approx. 250 KΩ |
| 19 | AC 0–250 V | Approx. 1 MΩ |
| 20 | AC 0–1 mA | Approx. 100 Ω |
| 21 | AC 0–10 mA | 50 Ω |
| 22 | AC 0–20 mA | 50 Ω |
| 23 | AC 0–100 mA | 10 Ω |
| 24 | * AC 0–1 A | Approx. 1 VA |
| 25 | * AC 0–5 A | Approx. 1 VA |
| 99 | Other than the above (Please consult with us.) | |

### Output Signal

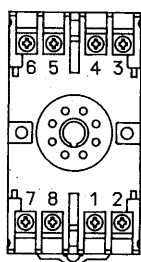| | | Allowable Load Resistance |
|---|---|---|
| A | DC 4–20 mA | 750 Ω or less |
| B | DC 1–5 mA | 3 KΩ or less |
| C | DC 2–10 mA | 1.5 KΩ or less |
| D | DC 0–1 mA | 15 KΩ or less |
| E | DC 0–10 mA | 1.5 KΩ or less |
| F | DC 0–16 mA | 937 Ω or less |
| G | DC 0–20 mA | 750 Ω or less |
| H | DC 1–5 V | 2.5 KΩ or more |
| J | DC 0–10 mV | 10 KΩ or more |
| K | DC 0–100 mV | 100 KΩ or more |
| L | DC 0–1 V | 500 Ω or more |
| N | DC 0–5 V | 2.5 KΩ or more |
| P | DC 0–10 V | 5 KΩ or more |
| R | DC ± 10 V | 5 KΩ or more |
| S | Other than the above (Please consult with us.): Voltage output 10 V or less Current output 20 mA or less | |

# Specification

| | |
|---|---|
| Input signal: | AC voltage, AC current |
| Output signal: | DC voltage, DC current |
| Accuracy: | ±0.2%·fs (at 23°C) |
| Allowable load resistance: | For voltage output, use the converter with a load current of 2 mA or less (1 µA or less for an output below 1 V·fs).<br>For current output, use the converter with a voltage drop of 15 V or less between output terminals. |
| Response time: | 0.5 sec (0–90%) |
| Output ripple: | 0.25% (p-p)·fs or less |
| Rated frequency: | Ranges marked * are from 45 to 65 Hz.<br>Ranges other than those marked * are from 20 to 1,000 Hz. |
| Waveform and frequency components: | Sine waves in Types AC and AZ<br>DC to 20 kHz in Types EF and EZ |
| Operating temperature and humidity: | -5 to +55°C, 90% RH or less (without condensation) |
| Influence of ambient temperature: | ±0.2%·fs/10°C |
| Insulation resistance: | 100 MΩ or more with a 500 VDC megger between the input/output terminal and power supply terminal, and between the input and output terminals (isolated type) |
| Dielectric strength: | 2,000 VAC for 1 minute between the input and output terminals (isolated type), and between the input/output terminal and power supply terminal |
| Power consumption: | Approx. 4 VA (AC), Approx. 120 mA (DC) |
| Zero & span adjustment: | ±20%·fs each (multi-turn trimmer) |

# Isolation Method

These units adopt two different isolation methods to accommodate a wide range of applications:
- Transformer isolation method: Use this method to convert measurement signals from CT or PT (marked * in the Input Signal column).
- Photocoupler isolation method: Use this method to convert signals from tachometer generators or low-level AC signals.

# Explanation of Terminals

| No. | Symbol | | Description |
|---|---|---|---|
| 1 | OUTPUT | + | Output signal |
| 2 | | - | |
| 3 | INPUT | | Input signal |
| 4 | | | |
| 5 | | | N.C. |
| 6 | | | N.C. |
| 7 | POWER | U (+) | Power supply |
| 8 | | V (-) | |